

## ABSTRACT

The present invention provides a deformable pad useful for chemical mechanical polishing ("CMP"), a CMP apparatus incorporating the deformable pad of the present invention, and methods for using the deformable pad and CMP apparatus of the present invention. The deformable pad of the present invention includes a plurality of solid supports which substantially eliminate the nonuniform polishing rates in known CMP processes and may be tailored to optimize a wide array of CMP processes. The CMP apparatus of the present invention incorporates a deformable pad of the present invention and may include several other known features, such as a polishing pad, a substrate carrier, mechanical assemblies for agitating the polishing pad or substrate carrier, etc. The methods falling within the scope of the present invention include providing a CMP polishing apparatus, providing a deformable pad of the present invention, providing a polishing pad attached to the deformable pad of the present invention, and bringing a substrate having a material layer to be polished in contact with the polishing pad. As will be appreciated by one of skill in the art, the CMP apparatus and the methods of the present invention may be easily adapted for use in virtually all CMP processes.